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SYNGENTA CROP PROTECTION, INC.  
PATENT AND TRADEMARK DEPARTMENT  
410 SWING ROAD  
GREENSBORO, NC 27409

EXAMINER
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SOROUGH, ALI

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* THOMAS BUNTIN THREEWITT  
and DENNIS EUGENE STAMM

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Appeal 2009-015180  
Application 10/520,367  
Technology Center 1600

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Before ERIC GRIMES, MICHAEL P. COLAIANNI, and BEVERLY A.  
FRANKLIN , *Administrative Patent Judges*.

GRIMES, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

This is an appeal under 35 U.S.C. § 134 involving claims to a method of controlling weeds in sorghum, which the Examiner has rejected as obvious. We have jurisdiction under 35 U.S.C. § 6(b). We affirm-in-part.

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

## STATEMENT OF THE CASE

Claims 1-3, 5, 6, and 9-12 are on appeal. With the exception of claims 3 and 12, the dependent claims have not been argued separately and therefore stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(vii). Claims 1, 3, and 12 are representative and read as follows:

1. A process for controlling weeds in a sorghum crop while reducing injury to such crop caused by the post-emergent application of a herbicidally effective amount of mesotrione over such crop, the process comprising applying to the locus of the weeds a herbicidally effective amount of:

(i) mesotrione, and  
(ii) a second herbicide selected from one or more of prosulfuron, dicamba, 2,4-D, halosulfuron-methyl and quinclorac  
wherein the mesotrione is applied post-emergent over such sorghum crop.

3. A process according to claim 1 using 0.5 to 400% of the second herbicide, based on the concentration of mesotrione.

12. A process according to claim 1 in which the second herbicide is prosulfuron.

### *Issue*

The Examiner has rejected claims 1-3, 5, 6, and 9-12 under 35 U.S.C. § 103(a) as obvious in view of Cornes<sup>2</sup> and Kent<sup>3</sup> (Ans. 3). The Examiner finds that “Cornes teaches a synergistic composition comprising mesotrione and a second herbicide” (Ans. 4) that can be applied either pre- or post-emergence to a wide variety of crops, including corn, wheat, and rice (*id.* at 4-5). The Examiner finds that Kent teaches that sorghum, like corn, wheat,

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<sup>2</sup> Cornes et al., WO 02/100173 A1, December 12, 2002

<sup>3</sup> N. L. Kent et al., *Technology of Cereals: An Introduction for Students of Food Science and Agriculture*, 4<sup>TH</sup> ED., ELSEVIER SCIENCE LTD, 1 (1994)

and rice, is a cereal (*id.* at 5) and concludes that it would have been obvious to apply Cornes' composition to sorghum (*id.* at 5-6).

Appellants contend that "Cornes contains no specific and unambiguous teaching regarding the selective control of weeds in sorghum crops," that Cornes does not teach or suggest the amounts recited in claim 3, and, with regard to claim 12, that Cornes only suggests use of prosulfuron on rice (Appeal Br. 10). Appellants also contend that they have shown that, unexpectedly, "the use of mesotrione along with one or more specific second herbicides provides reduced damage to sorghum as compared with the use of a composition comprising mesotrione alone" (*id.* at 11).

The issues presented are:

Does the evidence of record support the Examiner's conclusion that the references would have made obvious post-emergent application of mesotrione and one of the other herbicides recited in the claims to sorghum? and, if so,

Have Appellants provided evidence of unexpected results that outweighs the evidence in favor of a conclusion of obviousness?

### *Findings of Fact*

1. Cornes discloses "a synergistic herbicidal composition comprising; (A) mesotrione, and: (B) a second herbicide selected from; . . . dicamba," among others (Cornes, 1: 16 to 2: 4).

2. Cornes discloses that the "composition can be used over a wide range of crops, such as corn (maize), wheat, rice, potato or sugarbeet" (*id.* at 5: 23-24).

3. Kent discloses that the "principal cereal crops are wheat, barley, oats, rye, rice, maize, sorghum and the millets" (Kent, 1).

4. Cornes discloses that the “composition is useful in controlling the growth of undesirable vegetation by preemergence or postemergence application” (*id.* at 6: 3-4).

5. Cornes discloses that, in its composition, “the weight ratio of component (A) to component (B) at which the herbicidal effect is synergistic lies within the range of between about 32:1 and about 1:20 . . . with a weight ratio of between about 4:1 and about 1:10 being especially preferred.” (Cornes, 5: 1-4.)

6. Cornes discloses that “[a]dditional herbicides can also be added to the mixtures. For example, sulphonyl ureas such as nicosulfuron, prosulfuron, bensulfuron, can be added to the mixture of mesotrione and pyriftalid for use in rice.” (*Id.* at 4: 14-16.)

7. The Specification provides an example that describes applying compositions comprising mesotrione combined with each of the second herbicides recited in claim 1 to plots containing sorghum and weeds (Spec. 6: 19 to 7: 24).

8. The Specification reports that application of a composition containing mesotrione alone caused 13% damage to the sorghum and 40% damage to weeds, while application of compositions containing mesotrione and one of the other herbicides recited in claim 1 caused between 0.7% and 6.7% damage to the sorghum and 33.3% to 56.7% damage to the weeds (*id.* at 8: 1-3).

9. The Specification concludes that “the additional use of one of the specified herbicides, not only increases weed damage, but also reduces crop injury. This is a totally unexpected effect.” (*Id.* at 8: 5-7.)

*Principles of Law*

“Evidence that a compound is unexpectedly superior in one of a spectrum of common properties . . . can be enough to rebut a prima facie case of obviousness.” *In re Chupp*, 816 F.2d 643, 646 (Fed. Cir. 1987).

However, the “evidence presented to rebut a prima facie case of obviousness must be commensurate in scope with the claims to which it pertains.” *In re Dill*, 604 F.2d 1356, 1361 (CCPA 1979).

*Analysis*

Cornes discloses that the combination of mesotrione with dicamba (among other herbicides) provides a synergistic herbicidal composition (FF 1) that can be used either pre- or post-emergence (FF 4) on a “wide range of crops,” including the cereals corn, wheat, and rice (FF 2). Kent discloses that sorghum is also a cereal (FF 3).

We agree with the Examiner that these teachings would have made obvious, to a person of ordinary skill in the art, the postemergence application of a mixture of mesotrione and dicamba to sorghum with a reasonable expectation that the composition would be effective to control weed growth. The fact that “Cornes contains no specific and unambiguous teaching regarding the selective control of weeds in sorghum crops” (Appeal Br. 10) is not fatal to the Examiner’s rejection. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (“[T]he analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.”). Cornes’ disclosure that its compositions can be used on a “wide range of crops” (FF 2) would have

suggested its use with cereal crops, such as sorghum, in addition to those that Cornes specifically names.

With regard to claim 3, Appellants argue that Cornes does not teach or suggest applying 0.5% to 400% of the second herbicide, based on the amount of mesotrione (Appeal Br. 10). Cornes, however, discloses that a weight ratio of mesotrione to the second herbicide (e.g., dicamba) of 4:1 to 1:10 is especially preferred (FF 5). A mesotrione:dicamba ratio of 4:1 or 1:10 is equivalent to 25% or 1000% dicamba based on the amount of mesotrione. Cornes therefore discloses a preferred range for its composition that overlaps the range recited in claim 3. “A prima facie case of obviousness typically exists when the ranges of a claimed composition overlap the ranges disclosed in the prior art.” *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003).

With regard to claim 12, Appellants argue that “Cornes only actually teaches that prosulfuron can be used in combination with mesotrione (and pyritolid [sic]) in rice. There is no teaching contained in Cornes to suggest herbicidal combinations comprising mesotrione and prosulfuron might have general utility in cereals.” (Appeal Br. 10-11.)

We agree with Appellants that the cited references do not support the Examiner’s rejection with respect to claim 12. Cornes does not include prosulfuron among the herbicides useful with mesotrione in its inventive composition, only as useful in combination with mesotrione and pyriftalid for treating rice. While instant claim 12 is open to treating sorghum with pyriftalid along with mesotrione and prosulfuron, the Examiner has not adequately explained why the disclosure of a combination for use on rice, without more, would have made obvious its use on sorghum.

Appellants also argue that they have provided evidence of unexpected results; specifically, that the combination of mesotrione with the other herbicides recited in the claims reduces the damage caused to sorghum as compared to application of mesotrione alone (Appeal Br. 11-12).

This argument is unpersuasive. Claim 1 encompasses application of mesotrione and another herbicide at different times, rather than simultaneously, and post-emergent application is required only for mesotrione. Thus, claim 1 encompasses a pre-emergent application of the second herbicide, followed some time later by post-emergent application of mesotrione. The evidence provided in the Specification, while it may show unexpected results from applying mesotrione and a second herbicide at the same time, does not show any unexpected results when they are applied at different times. The evidence therefore is not commensurate in scope with claim 1.

### *Conclusions of Law*

The evidence of record supports the Examiner's conclusion that the references would have made obvious post-emergent application of mesotrione and one of the other herbicides recited in the claims to sorghum. However, the evidence does not support the Examiner's conclusion that Cornes would have made it obvious to apply mesotrione and prosulfuron to sorghum. Appellants have not provided evidence of unexpected results that outweighs the evidence in favor of a conclusion of obviousness.

### SUMMARY

We affirm the rejection of claims 1-3, 5, 6, and 9-11 as obvious based on Cornes and Kent. We reverse the rejection of claim 12.



Appeal 2009-015180  
Application 10/520,367

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART

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SYNGENTA CROP PROTECTION , INC.  
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GREENSBORO NC 27409